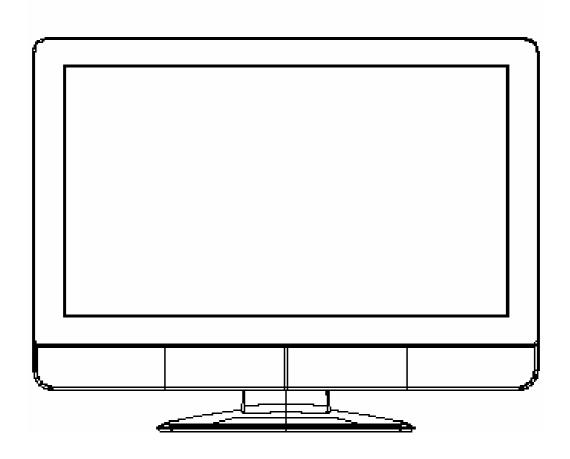
Service Manual



Model #: VIZIO GV42L FHDTV10A_AUO

V, Inc

320A Kalmus Drive Costa Mesa, CA 92626 TEL: +714-668-0588 FAX:+714-668-9099

Table of Contents

CONTENTS	PAGE
Sections	
1. Features	1-1
2. Specifications	2-1
3. On Screen Display	3-1
4. Factory Preset Timings	4-1
5. Pin Assignment	5-1
6. Main Board I/O Connections	6-1
7. Theory of Circuit Operation	7-1
8. Waveforms	8-1
9. Trouble Shooting	9-1
10. Block Diagram	10-1
11. Spare parts list	11-1
12. Complete Parts List	12-1
Appendix	
1. Main Board Circuit Diagram	
2. Main Board PCB Layout	
3. Assembly Explosion Drawing	
Block Diagram	

COPYRIGHT © 2000 V, INC. ALL RIGHTS RESERVED.

IBM and IBM products are registered trademarks of International Business Machines Corporation.

Macintosh and Power Macintosh are registered trademarks of Apple Computer, Inc.

VINC and VINC products are registered trademarks of V, Inc.

VESA, EDID, DPMS and DDC are registered trademarks of Video Electronics Standards Association (VESA).

Energy Star is a registered trademark of the US Environmental Protection Agency (EPA).

No part of this document may be copied, reproduced or transmitted by any means for any purpose without prior written permission from VINC.

FCC INFORMATION

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause unacceptable interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures -- reorient or relocate the receiving antenna; increase the separation between equipment and receiver; or connect the into an outlet on a circuit different from that to which the receiver is connected.

FCC WARNING

To assure continued FCC compliance, the user must use a grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores. Also, any unauthorized changes or modifications to Amtrak products will void the user's authority to operate this device. Thus VINC Will not be held responsible for the product and its safety.

CE CERTIFICATION

This device complies with the requirements of the EEC directive 89/336/EEC with regard to "Electromagnetic compatibility."

SAFETY CAUTION

Use a power cable that is properly grounded. Always use the AC cords as follows – USA (UL); Canada (CSA); Germany (VDE); Switzerland (SEV); Britain (BASEC/BS); Japan (Electric Appliance Control Act); or an AC cord that meets the local safety standards.

Chapter 1 Features

- 1. Built in TV channel selector for TV viewing
- 2. Simulatnueous display of PC and TV images
- 3. Connectable to PC's analog RGB port
- 4. Built in S-video, HDTV, composite video, HDMI and TV out
- 5. Built in auto adjust function for automatic adjument of screen display
- 6. High quality 1920X1080 pixel by pixel display.
- 7. Smoothing function enables display of smooth texts and graphics even if image with resolution lower than 1920X1080 is magnified
- 8. Advanced video functions for personal favor.
- 9. Picture In Picture (PIP) funtion to show TV or VCR images
- 10. Power saving to reduce consumption power too less than 3W
- 11. On Screen Display: user can define display mode (i.e. color, brightness, contrast, sharpness, backlight), sound setting, PIP, TV channel program, aspect and gamma or reset all setting.

CONFIDENTIAL - DO NOT COPY

Page 1-1

Chapter 2 Specification

1. TFT-LCD CHARACTERISTICS

Model Name: T420HW01 V1 (Vendor: AUO LCD Co., Ltd)

Display Size: 42.02 inches (1067.31mm) diagonal

Outline Dimension: 983.0 mm (H) x 576.0 mm (V) x 52.3 mm (D) (Typ.)

Pixel Pitch: 0.4845mm x 0.4845mm x RGB

Pixel Format: 1920 horiz. By 1080 vert. Pixels RGB strip arrangement

Display Operating Mode: normally Black Surface Treatment: AG. Hard Coating (3H),

2. TFT-LCD OPTICAL CHARACTERISTICS

Contrast ratio: 1500(Typ)

Surface Luminance, White: 500 cd/m² (Typ)

Luminance Variation, $\delta = 1.3$ (Max)

Response Time = 8 mx (Max=10mx)

Viewing Angle (CR>10)

Left: 89°typ. Right: 89°typ. Top: 89°typ. Bottom: 89°typ.

3. Input Connectors

RJ11, D-SUB15PIN (MINI, 3rows), Headphone, HDMIX2, RCAX3 (component), RCAX2 (AUDIO in), RCAX3 (composite), RCAX2 (AUDIO in), S-Video, Tuner

4. POWER SUPPLY

Input Voltage Level: 90~240 Vac, 50/60 Hz

Power Consumption: 280W MAX Power OFF: to less than 3W MAX

5. Speaker

Output 10W (max) X2

CONFIDENTIAL - DO NOT COPY

Page 2-1

6. ENVIRONMENT

- 6-1. Operating Temperature: 5c~35c (Ambient)
- 6-2. Operating Humidity: Ta= 35 °C, 90%RH (Non-condensing)
- 6-3. Operating Altitude: 0 14,000 feet (4267.2m)(Non-Operating)

7. DIMENSIONS (Physical dimension)

Dimensions with stand:

1066mm(W) x 765.4mm(H) x 269.2mm(D) inches

Dimension without stand:

1066mm(W) x 650.5mm(H) x 123.5mm(D) inches

8. WEIGHT (Physical weight)

- a. Net 36.0 +/- 0.5 kgs
- b. Gross 43+/- 0.5 kgs

Precaution

Please pay attention to the followings when you use this TFT LCD module.

1. OPERATING PRECAUTIONS

- (1) The spike noise causes the mis-operation of circuits. It should be lower than following voltage:
 - V=±200mV(Over and under shoot voltage)
- (2) Response time depends on the temperature. (In lower temperature, it becomes longer.)
- (3) Brightness depends on the temperature. (In lower temperature, it becomes lower.)And in lower temperature, response time (required time that brightness is stable after turned on) becomes longer.
- (4) Be careful for condensation at sudden temperature change. Condensation makes damage to polarizer or electrical contacted parts. And after fading condensation, smear or spot will occur.
- (5) When fixed patterns are displayed for a long time, remnant image is likely to occur.
- (6) Module has high frequency circuits. System manufacturers shall do sufficient suppression to the electromagnetic interference. Grounding and shielding methods may be important to minimize the interference.

CONFIDENTIAL - DO NOT COPY

2. HANDLING PRECAUTIONS FOR PROTECTION

- (1) The protection film is attached to the bezel with a small masking tape. When the protection film is peeled off, static electricity is generated between the film and polarizer. This should be peeled off slowly and carefully by people who are electrically grounded and with well ion-blown equipment or in such a condition, etc.
- (2) When the module with protection film attached is stored for a long time, sometimes there remains a very small amount of glue still on the bezel after the protection film is peeled off.
- (3) You can remove the glue easily. When the glue remains on the bezel surface or its vestige is recognized, please wipe them off with absorbent cotton waste or other soft material like chamois soaked with normal-hexane.

CONFIDENTIAL - DO NOT COPY

Chapter 3 On Screen Display

On Screen Display (OSD) is a friendly interface providing the function adjusting in our system. Customers could operate it only by few buttons. There is the introduction of the OSD.

Main unit button

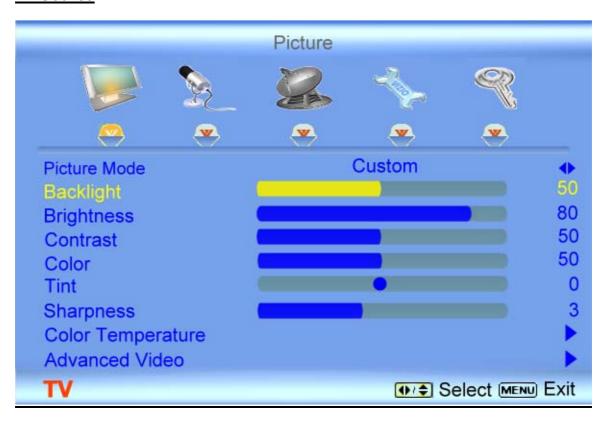
MENU OK

CH \blacktriangle \uparrow CH \blacktriangledown \downarrow VOL + \leftarrow VOL - \rightarrow Input

[MENU]

"MENU" button could star the OSD which could adjust the performance and set up the setting between the different input sources. There are the structures.

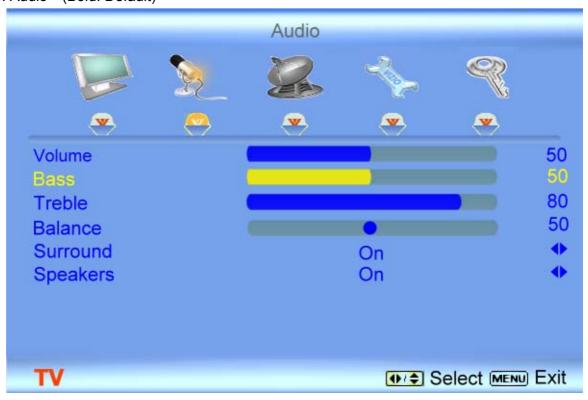
TV Source



A. Picture: (Bold: Default)

- a. Picture Mode (Standard/Movie /Game / Custom)
- b. Backlight (0~100, 90)
- c. Contrast (0~100, 50)
- d. Brightness (0~100, 50)
- e. Color (saturation)(0~100, 50)
- f. Tint (hue) (-32~32, 0)
- g. Sharpness (0~7, 4)
- h. Color Temperature (Cool/Normal/Warm/Custom)
- i. Advanced Video
 - 1. DNC (Low/Medium/Strong/Off)
 - 2. Black level extender (Off/On)
 - 3. White Peak Limiter (On/Off)
 - 4. CTI (Low/Medium/Strong/Off)
 - 5. Flesh Tone (Off/On)
 - 6. Adaptive Luma (Off/On)
 - 7. DCR (Off/On)

B. Audio: (Bold: Default)



- a. Volume (0~100, 25)
- b. Bass (0~100, 50)
- c. Treble (0~100, 50)
- d. Balance (-50~50, 0)
- e. Surround (ON/OFF)
- f. Speakers (ON/OFF)

C. TV: (Bold: Default)



- a. Tuner Mode (Cable/Air)
- b. Auto Search
- c. Skip Channel
- d. Digital Audio Out (PCM/Dolby Digital/OFF)
- e. Time Zone

(Eastern/Indiana/Central/Mountain/Arizona/Pacific/Alaska/Hawaii)

f. DAYLIGHT SAVING (ON, OFF)

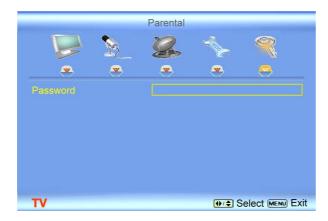
- D. Setup: (Bold: Default)
 - a. Language (English/ Français / Español)
 - b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
 - c. Analog CC (OFF/CC1~4/TT1~4)
 - d. Digital CC (OFF/CC1~4/Service1~6)
 - e. Digital CC Style
 - 1. Caption Style (As Broadcaster/Custom)
 - 2. Size (Large/Small/Medium)
 - 3. Font Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
 - 4. Font Opacity (Solid/Translucent/Transparent)
 - Background Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
 - 6. Background Opacity (Solid/Translucent/Transparent)
 - 7. Window Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
 - 8. Window Opacity (Solid/Translucent/Transparent)

f. PIP

- 1. Style (OFF/PIP/POP)
- 2. Input (TV, AV1, AV2, COMPONENT1, COMPONENT2, RGB, HDMI1, HDMI2)
- 3. Size (Small/Medium/Large)
- 4. Position(Bottom Right, Bottom Center, Bottom Left, Middle Left, Top Left, Top Center, Top Right, Middle Right)
- g. H/V Position
 - 1. H. Position (0~64, 32)
 - 2. V. Position (0~32, 16)
 - 3. V. size (0~100, 20)
- h. Rest All Setting (OK/Cancel)

CONFIDENTIAL - DO NOT COPY

E. Parental: (Bold: Default)





Password (Default => 0000)

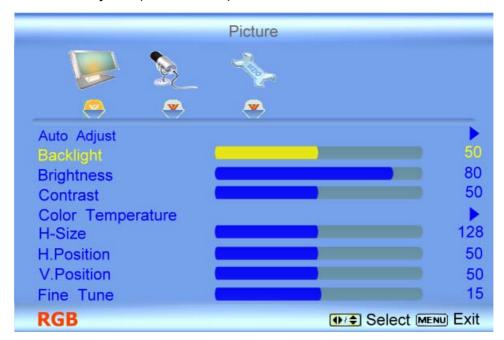
- a. Cannel Block
- b. TV Rating
- c. Move Rating
- d. Block Unrated TV (NO/Yes)
- e. Access Code Edit





RGB Mode

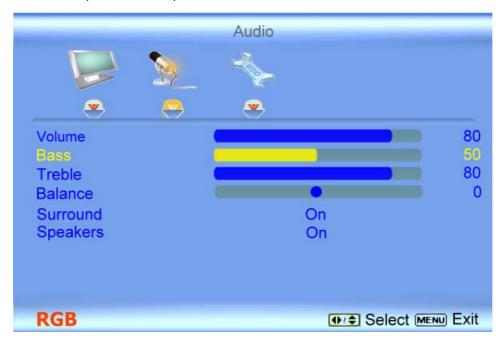
A. Picture Adjust: (Bold: Default)



- a. Auto Adjust
- b. Backlight (0~100, 90)
- c. Contrast (0~100, 50)
- d. Brightness (0~100, 50)
- e. Color Temperature (6500/9300/Custom)
- f. H-Size (0~255, 127)
- g. H-Position (0~100, 65)
- h. V-Position (0~100, 49)
- i. Fine Tune (0~31, 17)

CONFIDENTIAL - DO NOT COPY

B. Audio: (Bold: Default)



- a. Volume (0~100, 25)
- b. Bass (0~100, 50)
- c. Treble (0~100, 50)
- d. Balance (-50~50, 0)
- e. Surround (ON/OFF)
- f. Speakers (ON/OFF)
- D. Setup: (Bold: Default)
 - a. Language (English/ Français / Español)
 - b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
 - c. Analog CC (OFF/CC1~4/TT1~4)
 - d. Digital CC (OFF/CC1~4/Service1~6)
 - e. Digital CC Style
 - 1. Caption Style (As Broadcaster/Custom)
 - 2. Size (Large/Small/Medium)
 - 3. Font Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
 - 4. Font Opacity (Solid/Translucent/Transparent)
 - Background Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
 - 6. Background Opacity (Solid/Translucent/Transparent)

- 7. Window Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
- 8. Window Opacity (Solid/Translucent/Transparent)

f. PIP

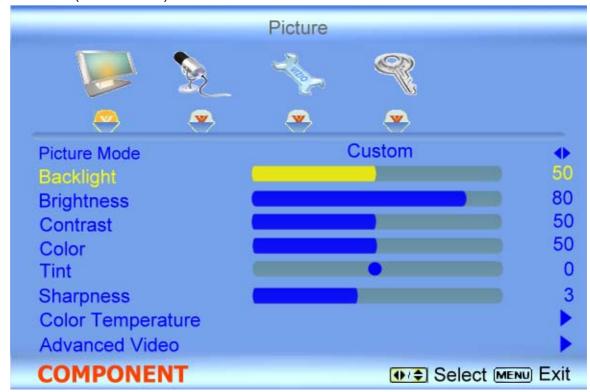
- 1. Style (OFF/PIP/POP)
- 2. Input (TV, AV1, AV2, COMPONENT1, COMPONENT2, RGB, HDMI1, HDMI2)
- 3. Size (Small/Medium/Large)
- 4. Position(Bottom Right, Bottom Center, Bottom Left, Middle Left, Top Left, Top Center, Top Right, Middle Right)

g. H/V Position

- 1. H. Position (0~64, 32)
- 2. V. Position (0~32, 16)
- 3. V. size (0~100, 20)
- h. Rest All Setting (OK/Cancel)

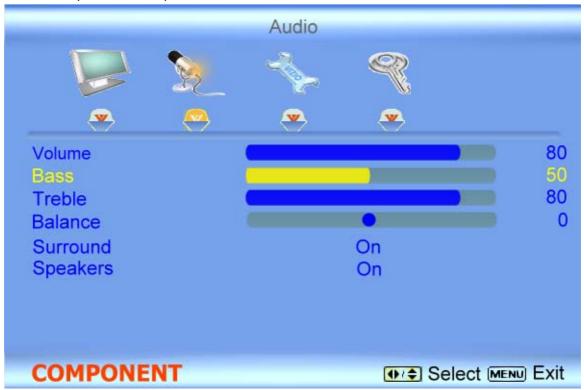
AV / COMPONENT MODE

A. Picture: (Bold: Default)



- a. Picture Mode (Standard/Movie /Game / Custom)
- b. Backlight (0~100, 90)
- c. Contrast (0~100, 50)
- d. Brightness (0~100, 50)
- e. Color (saturation)(0~100, 50)
- f. Tint (hue) (-32~32, 0)
- g. Sharpness (0~7, 4)
- h. Color Temperature (Cool/Normal/Warm/Custom)
- i. Advanced Video
 - 1. DNC (Low/Medium/Strong/Off)
 - 2. Black level extender (Off/On)
 - 3. White Peak Limiter (On/Off)
 - 4. CTI (Low/Medium/Strong/Off)
 - 5. Flesh Tone (Off/On)
 - 6. Adaptive Luma (Off/On)
 - 7. DCR (Off/On)

B. Audio: (Bold: Default)



- a. Volume (0~100, 25)
- b. Bass (0~100, 50)
- c. Treble (0~100, 50)
- d. Balance (-50~50, 0)
- e. Surround (ON/OFF)
- f. Speakers (ON/OFF)

C. Setup: (Bold: Default)

- a. Language (English/ Français / Español)
- b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
- c. Analog CC (OFF/CC1~4/TT1~4)
- d. Digital CC (OFF/CC1~4/Service1~6)
- e. Digital CC Style
 - 1. Caption Style (As Broadcaster/Custom)
 - 2. Size (Large/Small/Medium)
 - 3. Font Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
 - 4. Font Opacity (Solid/Translucent/Transparent)
 - Background Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
 - 6. Background Opacity (Solid/Translucent/Transparent)
 - 7. Window Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
 - 8. Window Opacity (Solid/Translucent/Transparent)

f. PIP

- 1. Style (OFF/PIP/POP)
- 2. Input (TV, AV1, AV2, COMPONENT1, COMPONENT2, RGB, HDMI1, HDMI2)
- 3. Size (Small/Medium/Large)
- 4. Position(Bottom Right, Bottom Center, Bottom Left, Middle Left, Top Left, Top Center, Top Right, Middle Right)

g. H/V Position

- 1. H. Position (0~64, 32)
- 2. V. Position (0~32, 16)
- 3. V. size (0~100, 20)
- h. Rest All Setting (OK/Cancel)

D. Parental: (Bold: Default)

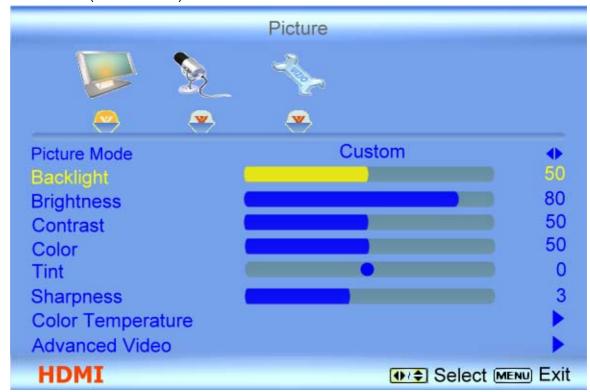


Password (Default => 0000)

- a. Cannel Block
- b. TV Rating
- c. Move Rating
- d. Block Unrated TV (NO/Yes)
- e. Access Code Edit

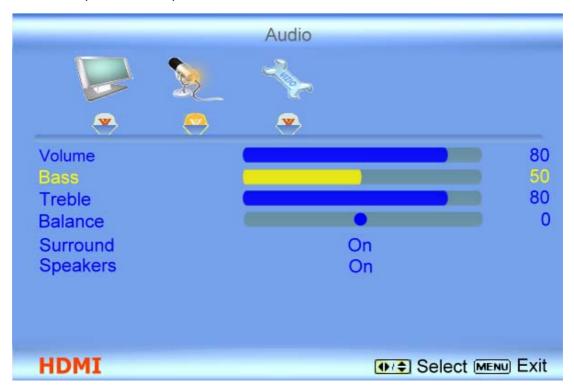
HDMI MODE

A. Picture: (Bold: Default)



- a. Picture Mode (Standard/Movie /Game / Custom)
- b. Backlight (0~100, 90)
- c. Contrast (0~100, 50)
- d. Brightness (0~100, 50)
- e. Color (saturation)(0~100, 50)
- f. Tint (hue) (-32~32, 0)
- g. Sharpness (0~7, 4)
- h. Color Temperature (Cool/Normal/Warm/Custom)
- i. Advanced Video
 - 1. DNC (Low/Medium/Strong/Off)
 - 2. Black level extender (Off/On)
 - 3. White Peak Limiter (On/Off)
 - 4. CTI (Low/Medium/Strong/Off)
 - 5. Flesh Tone (Off/On)
 - 6. Adaptive Luma (Off/On)
 - 7. DCR (Off/On)

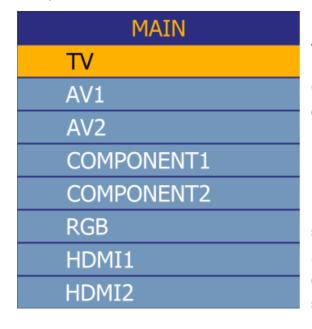
B. Audio: (Bold: Default)



- a. Volume (0~100, 25)
- b. Bass (0~100, 50)
- c. Treble (0~100, 50)
- d. Balance (-50~50, 0)
- e. Surround (ON/OFF)
- f. Speakers (ON/OFF)
- C. Setup: (Bold: Default)
 - a. Language (English/ Français / Espaňol)
 - b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
 - c. Analog CC (OFF/CC1~4/TT1~4)
 - d. Digital CC (OFF/CC1~4/Service1~6)
 - e. Digital CC Style
 - 1. Caption Style (As Broadcaster/Custom)
 - 2. Size (Large/Small/Medium)
 - 3. Font Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
 - 4. Font Opacity (Solid/Translucent/Transparent)
 - Background Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
 - 6. Background Opacity (Solid/Translucent/Transparent)
 - 7. Window Color (White/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
 - 8. Window Opacity (Solid/Translucent/Transparent)
 - f. PIP
 - 1. Style (OFF/PIP/POP)
 - 2. Input (TV, AV1, AV2, COMPONENT1, COMPONENT2, RGB, HDMI1, HDMI2)
 - 3. Size (Small/Medium/Large)
 - 4. Position(Bottom Right, Bottom Center, Bottom Left, Middle Left, Top Left, Top Center, Top Right, Middle Right)
 - g. H/V Position
 - 1. H. Position (0~64, 32)
 - 2. V. Position (0~32, 16)
 - 3. V. size (0~100, 20)
 - h. Rest All Setting (OK/Cancel)

[INPUT]

"INPUT" could supply an interface providing a list. The list shows input sources and provides the choices of different sources. The list includes items as below:



A. **TV**: Analog TV or digital TV

B. AV1, AV2: Composite (AV) signal

C. **Component1**, **Component2**: Color difference (YPbPr) video signals.

D. **RGB**: Video Graphics Array (VGA) or D-sub video signals.

E. **HDMI1**, **HDMI2**: High Definition Multimedia Interface (HDMI) multimedia signals.

Note: The list of PIP provides the choices of different sources on sub-screen.

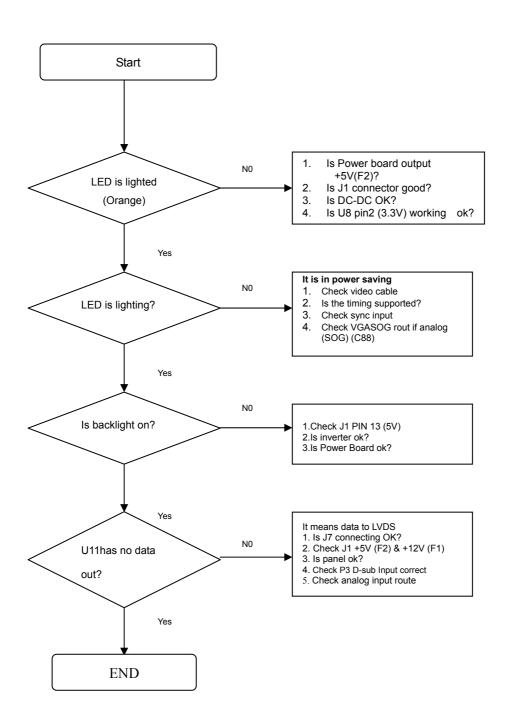
[INFO]

"INFO" button could show an information bar which displays the information about the input signal on our LCD TV.



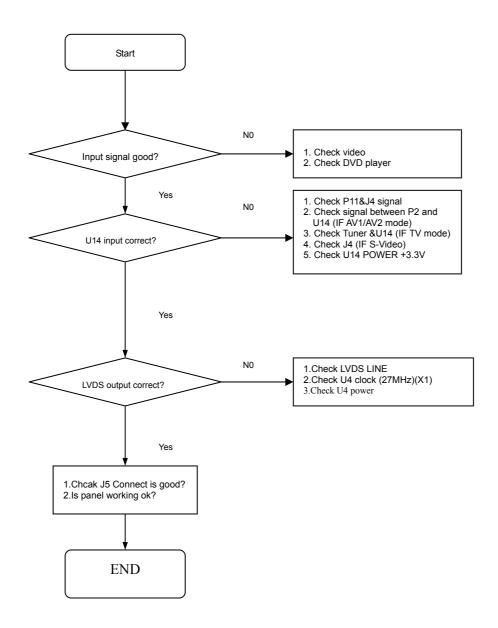
Chapter 9 Trouble shooting

MONITOR DISPLAY NOTHING (PC MODE)

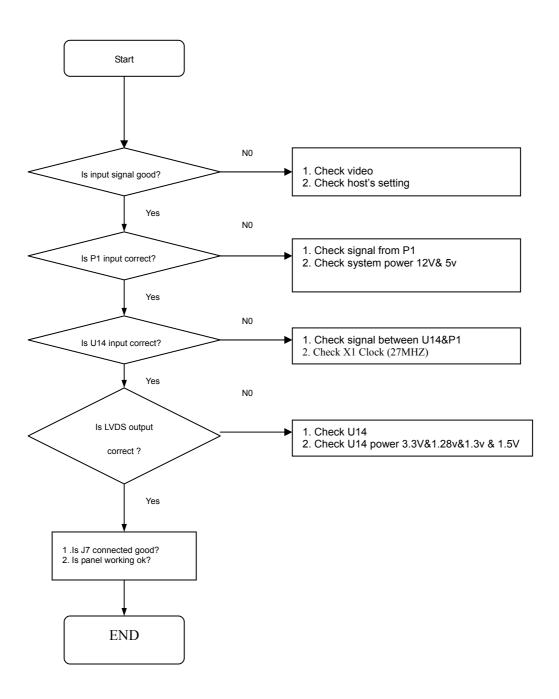


CONFIDENTIAL - DO NOT COPY

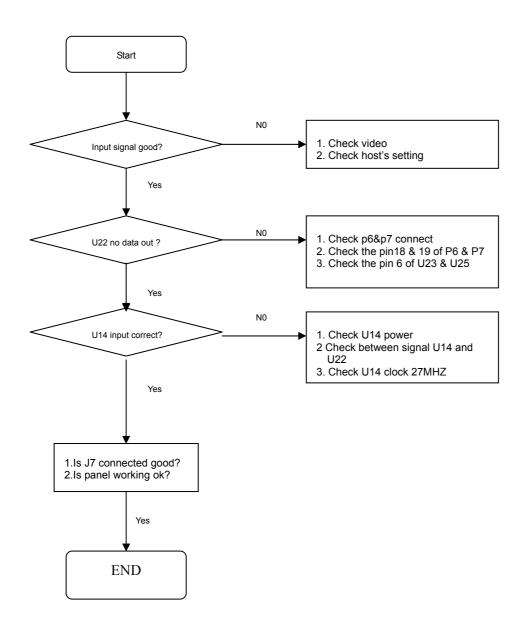
(TV, COMPOSITE VIDEO1, 2, S-VIDEO) IS NOT DISPLAY CORRECTLY



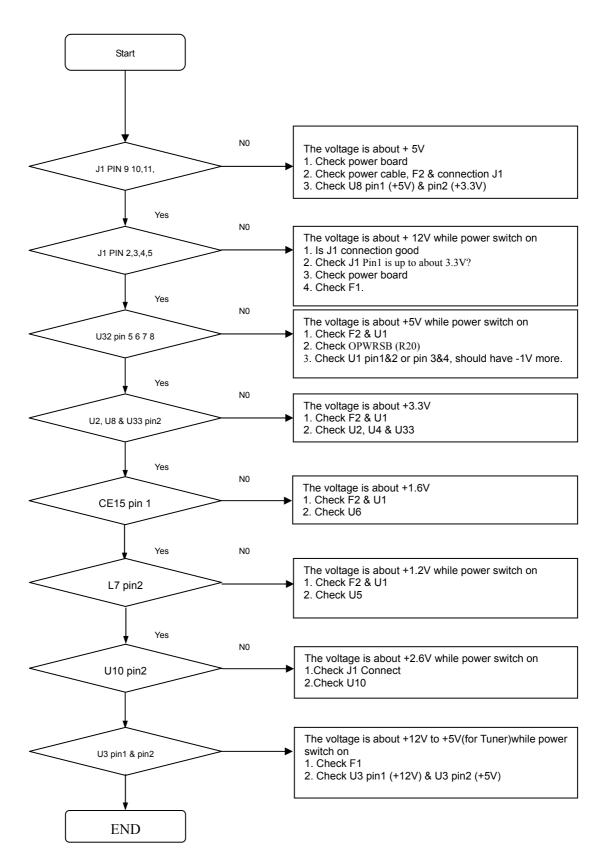
(COMPONENT1, 2) IS NOT DISPLAY CORRECTLY



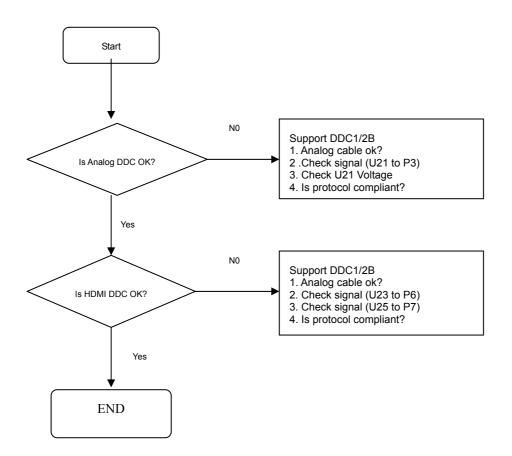
(HDMI) IS NOT DISPLAY CORRECTLY



TROUBLE OF DC-DC CONVERTER



TROUBLE OF EDID READING

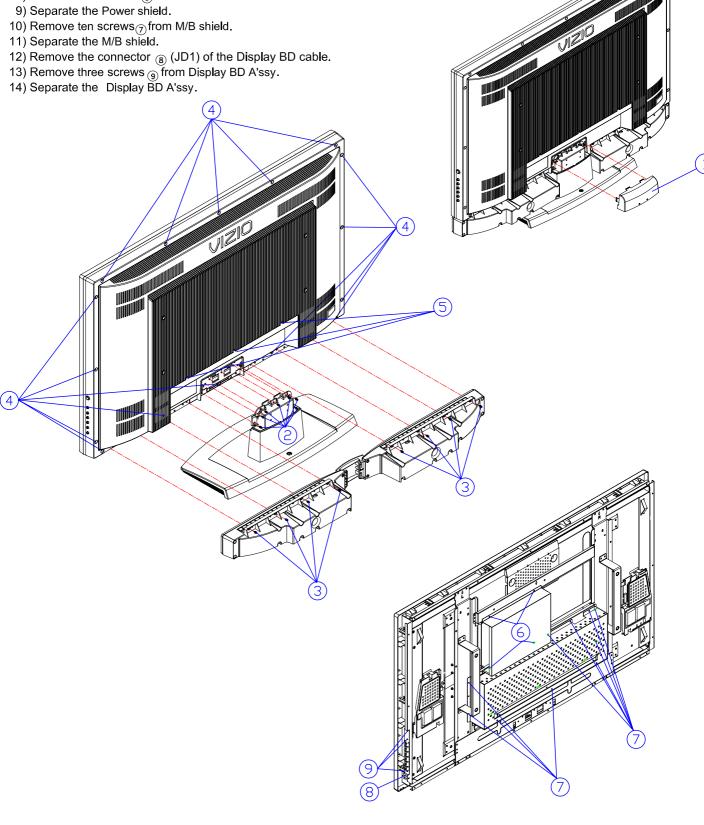


DISASSEMBLY INSTRUCTIONS -

1.REAR COVER ASS'Y REMOVAL

Note: Spread a mat underneath to avoid damaging the Plasma surface.

- 1) Separate the Base cover ① from rear cover.
- 2) Remove seven screws (2) from Base Ass'y.
- 3) Separate the Base Ass'y.
- 4) Remove eight screws (3) from Speaker Ass'y.
- 5) Separate the Speaker Ass'y.
- 6) Remove sixteen screws $_{(4)}$ and three screws $_{(5)}$ from rear cover.
- 7) Separate the rear cover.
- 8) Remove four screws (6) from Power shield.



DISASSEMBLY INSTRUCTIONS

2.MAIN BD ASS'Y / POWER BD ASS'Y / CONNECTOR BD ASS'Y / LCD CONNECTOE BD ASS'Y REMOVAL

- 1) Remove the connector ¹⁰ (CN1) of the AC power cable.
- 2) Remove the connector ① (CN2) of the Inventer cable.
- 3) Remove the connector ② (CN3) of the Inventer cable.
- 4) Remove the connector 3 (CN5) of the Main BD cable.
- 5) Remove six screws 4 from Power BD Ass'y.
- 6) Separate the Power BD Ass'y.
- 7) Remove the connector [®] (J8) of the LCD connector BD cable.
- 8) Remove the connector (7) (J7) of the Main BD cable.
- 9) Remove the connector (6) (J5) of the LVDS cable.
- 10) Remove the connector (§ (J6) of the Keypad BD cable.
- 11) Remove six screws @ from Main BD Ass'y.
- 12) Remove four screws 2) from heatsink.
- 13) Remove one screw ② from Chassis.
- 14) Remove nineteen screws 28 and two hexagon screws 27 from I/O BKT.
- 15) Remove the connector ② (JD1) of the Connector bd cable.
- 16) Remove the connector @ (JS1) @ (JS2) of the LCD Connector bd cable.
- 17) Separate the Main BD A'ssy and LCD Connector BD Ass'y and Connector BD.

